Source Water Assessment Program (SWAP) Report For CHARLTON HOUSING AUTHORITY

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
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Table 1: Public Water System (PWS) Information

PWS NAME	CHARLTON HOUSING AUTHORITY
PWS Address	ONE MEADOWVIEW DR.
City/Town	CHARLTON
PWS ID Number	2054043
Local Contact	JEAN GARMONE- VINCENT
Phone Number	(508) 248-5067

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well # 1	2054043-01G	230	560	Moderate

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

? inventory land uses within the recharge areas of all public water supply sources;
? assess the susceptibility of drinking water sources to contamination from these land uses; and
? publicize the results to provide support for improved protection.

Maintaining Your Good Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The well for the facility is located on the southern property line, behind a building at the end of Meadowview Drive. The well has a Zone I of 230 feet and an Interim Wellhead Protection Area (IWPA) of 560 feet. The well is a 325 feet deep rock well. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA.

The well serving the facility is treated through a “Big Blue” cartridge filter in order to remove sediments. For current information on monitoring results and treatment, and a copy of the most recent Consumer Confidence Report please contact the Public Water System contact person listed above.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.
Key issues include:

1. **Inappropriate activities in Zone Is;**
2. **Aboveground storage tank (AST) with heating oil;**
3. **Septic system; and**
4. **Transportation corridor within the IWPA.**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of only moderate and low threat land use or activity in the IWPA.

1. **Zone I** - Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone I. The facility's Zone I contains on-site buildings, septic system components, roads, and parking areas. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements. Please note that water systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying their system.
- ✓ If the facility intends to continue utilizing the structures, septic system, roads and parking in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

2. Aboveground Storage Tank (AST) – An AST with heating oil is outside the garage building, within the IWPA. If managed improperly, Aboveground Storage Tanks can be a potential source of contamination due to leaks or spills of the chemicals they store.

Recommendations:

- ✓ Aboveground storage tanks in your IWPA should be located on an impermeable surface, and also contained in an area large enough to hold 110% of the complete liquid volume, should a spill occur.
- ✓ Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices. Any modifications to the AST must be accomplished in a manner consistent with Massachusetts's plumbing, building,

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Cemetery	No	Yes	Low	
Parking lot & road	Yes	Yes	Moderate	Entire area is paved
Septic System	Yes	Yes	Moderate	See septic systems brochure in the appendix
Fuel Storage Above Ground	No	Yes	Moderate	Tanks belonging to the facility and those belonging to the private homes
Transportation corridor	Yes	Yes	Moderate	Route 31
Vegetable garden	No	Yes	Moderate	Fertilizer & pesticide use
Structures	Yes	Yes	-----	Non-water supply structures in Zone I

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

and fire code requirements. Consult with the local fire department for any additional local code requirements regarding ASTs.

3. Septic system - The septic system leaching field is within the Zone I. Also, some private homes located within the Zone I and IWPA are on septic systems. There were plans to hook-up to town sewer by the end of the summer of this year. As long as the septic system is still operating, staff should be trained on proper disposal of hazardous materials.

Recommendation:

- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

4. Transportation Corridor - Route 31 is located within the IWPA of the well. Highways are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.

Recommendation:

- ✓ Contact local fire department to ensure that the IWPA is included in Emergency Response Planning

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Charlton Housing Authority should review and adopt the following recommendations at the facility:

Zone I:

- ✓ Consider well relocation if Zone I threats cannot be mitigated**.** Please note that DEP Permit Approvals must be obtained prior to the installation of a new well.
- ✓ If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.

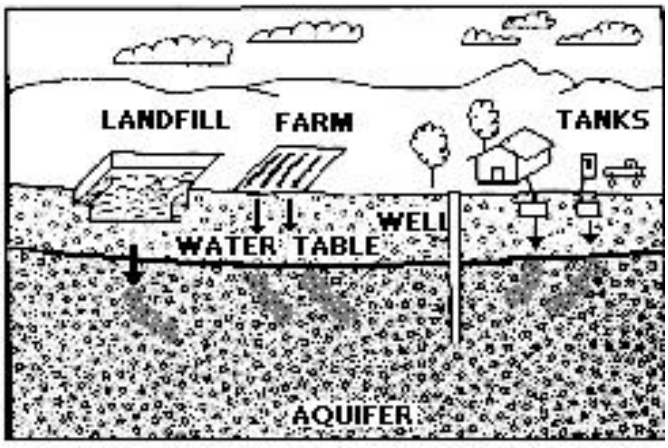

Figure 1: Example of how a well could become contaminated by different land uses and activities.

- ✓ Do not use road salt within Zone I.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, and certified operator.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/brp/dws/dwspubs.html.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at: www.state.ma.us/dep/brp/dws.

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

Planning:

- ✓ Work with local officials in Charlton to include the facility's IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the 2001 "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet from last year (Please note: each program year the Department posts a new Request for Response for the Grant program (RFR)).

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix